REMARKS

The Examiner required correction of the drawings. In particular, the Examiner indicated that Fig. 2 should be designated with a legend such as "Prior Art." In response, Applicants are submitting a replacement sheet 1/4 in which Fig. 2 is amended to add the legend "(PRIOR ART)".

Claims 13-36 were pending in the above-identified application when last examined. Claims 13, 15, 22, 24, 28, 31, and 32 are amended as indicated above.

Claims 28, 29, 31, and 32 were rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Pat. App. Pub. No. 2003/0146082 (Gibson). Applicants respectfully traverse the rejection.

Gibson is directed to a ventilation system that uses ozone to remove contaminants that cooking may produce. In this regard, Gibson discloses, "A method and apparatus for regulating an amount of ozone incident to an air stream of an air purifier." See the abstract of Gibson. Fig. 2 of Gibson shows a ventilating duct 10 including UV lamps 25 and sensors 60 and 65. Gibson uses the sensors to measure a cooking load and/or ozone levels. For example, in paragraph **[0042]**, Gibson states, "Referring to FIGS. 2 and 3, the second sensor 65 preferably measures the amount of ozone at the end opposite the cooking source ... and the first sensor 60 preferably measure the amount of contaminants." Based on the sensor readings, Gibson can alter the flow through ventilation system 10 to change the exposure of an air stream to ozone.

Independent claim 28 distinguishes over Gibson at least by reciting, "(b) measuring a current of ions produced by exposing a gas mixture ... to output from the lamp; ... and (d) in response to the concentration being above the threshold level, applying a second drive signal to the lamp and repeating steps (b) and (c)." Gibson fails to disclose or suggest changing a lamp drive signal based on a measurement of a current of ions produced by exposure of a gas to output from the lamp. Instead, Gibson measures ozone or contaminants and changes the operating parameters of a ventilation system.

In accordance with an aspect of the current invention, a photo-ionization detector (PID) can save power by reducing the drive power of a lamp when the ionizable gas concentration is high. This power savings can be achieved without undue loss in sensing

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AMENDMENTS TO THE DRAWINGS

Amendments to the drawings are on the attached replacement sheets 1/4 as follows.

Fig. 2 is amended to add the legend "(PRIOR ART)".

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accuracy and can result in longer operating times for a battery-powered PID. Gibson is silent regarding the workings of a PID, and Gibson fails to provide any suggest altering the drive signal of a lamp that produces measured ions. Accordingly, claim 28 is patentable over Gibson.

Claims 29, 31, and 32 depend from claim 28 and are patentable over Gibson for at least the same reasons that claim 28 is patentable over Gibson.

Claim 32 further distinguishes over Gibson by reciting, "a photo-ionization detector implementing the process of claim 28." Gibson describes methods that are implemented in a ventilation or purification system, but not in a photo-ionization detector.

For the above reasons, Applicants request reconsideration and withdrawal of the rejection under 35 U.S.C. § 102.

Claims 13, 19, 22, 23, 27, and 30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of U.S. Pat. No. 6,320,388 (Sun). Applicants respectfully traverse the rejection.

Independent claim 13 is patentable over the combination of Gibson and Sun at least for reciting, "(a) generating a measurement signal from a current of ions produced by exposing sample gas to output from a lamp operated at an initial level of a drive power; ... (c) changing the drive power to a new level in response to a trigger event that indicates that intensity of the output of the lamp may have changed; (d) generating the measurement signal from a current of ions produced by exposing sample gas to the output from the lamp operated at the new level; and (e) determining a concentration of the ionizable gases using the measurement signal generated in step (d)."

Gibson as noted above discloses changing the operating parameters of a ventilation system based on measurements of concentrations of contamination or ozone (O_3). Gibson fails to disclose or describe the operation of a detector and particularly fails to disclose changing the drive power of a lamp used to create ions that are measured for determination of a gas concentration.

Sun discloses operation of a photo-ionization detector, but the combination of Gibson and Sun fails to suggest changing drive power of a lamp as recited in claim 13. In particular, Gibson changes the operating parameters such as exposure of an air stream to UV lamps in a ventilation system to provide adequate purification of the air stream without creating an excess of ozone. Neither Gibson nor Sun provides any suggestion of or motivation for

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changing the lamp power within a detector, particularly when the measurement accuracy of the detector may depend on the output of the lamp. Accordingly, claim 13 is patentable over the combination of Gibson and Sun.

Claims 19, 22, 23, and 27 depend from claim 13 and are patentable over the combination of Gibson and Sun for at least the same reasons that claim 13 is patentable over the combination of Gibson and Sun.

Claim 19 further distinguishes over Gibson and Sun by reciting, "the trigger event is a measurement of intensity of the lamp indicating that the intensity has fallen from a previous intensity level." In regard to this limitation, the Examiner cited paragraph **[0040]** of Gibson. However, paragraph **[0040]** states, "In one exemplary embodiment of the present invention, the array of UV lamps 25 synchronized by a linkage will be used in the ventilation duct 10 for regulating dynamically the ozone concentration in the system based on a feedback loop in control circuit 90." Gibson provides no suggestion of measuring the intensity of a lamp.

Claim 30 depends from claim 28, which is patentable over Gibson for at least the reasons given above. In particular, Gibson fails to disclose or suggest changing the drive signal to a lamp that produces a measured current of ions. As noted above, the combination of Gibson and Sun similarly fails to disclose or suggest changing the drive signal to a lamp that produces a measured current of ions. Accordingly, claim 30 is patentable over the combination of Gibson and Sun.

For the above reasons, Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 14 and 18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of Sun or admitted prior art and further in view U.S. Pat. App. Pub. No. 2002/0171819 (Cheung). Applicants respectfully traverse the rejection.

Claims 14 and 18 depend from claim 13, which is patentable over Gibson, Sun, and the admitted prior art for at least the reasons given above. In particular, the combination of Gibson, Sun, and the admitted prior art fails to disclose or suggest changing the drive signal to a lamp that produces a measured current of ions. The Examiner cites Cheung for teaching "calibration scans at the end of a given time period." However, such teaching does not suggest the features of claim 13 that are missing from Gibson, Sun, and the admitted prior art. Accordingly, claim 13 and claims 14 and 18 are patentable over the combination of Gibson, Sun, the admitted prior art, and Cheung.

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For the above reasons, Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 15-17 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of Sun or admitted prior art and Cheung and further in view of U.S. Pat. No. 5,703,489 (Kuroe). Applicants respectfully traverse the rejection.

Claims 15-17 depend from claim 13, which is patentable over Gibson, Sun, the admitted prior art, and Cheung for at least the reasons given above. In particular, Gibson, Sun, the admitted prior art, and Cheung fail to disclose or suggest changing the drive signal to a lamp that produces a measured current of ions. The Examiner cites Kuroe for teaching a "trigger event has parameters selected according to previous calibrations ... so that a change between a drive power of the last calibration and a preceding calibration is selected to select the operating time ... or to select an amount of change in the drive power." Even assuming for the purpose of this argument that Kuroe provides such teaching, such teaching does not suggest the features of claim 13 that are missing from Gibson, Sun, the admitted prior, and Cheung. Accordingly, claim 13 and claims 15-17 are patentable over the combination of Gibson, Sun, the admitted prior, Cheung, and Kuroe.

For the above reasons, Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claim 20 was rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of Sun or admitted prior art and further in view U.S. Pat. No. 5,773,833 (Hsi). Applicants respectfully traverse the rejection.

Claim 20 depends from claim 13, which is patentable over the combination of Gibson, Sun, and admitted prior art for at least the reasons provided above. The Examiner cites Hsi for teaching calibration with "zero gas." However, such teaching of Hsi does not provide the features of claim 13 that are missing from the combination of Gibson, Sun, and admitted prior art. Accordingly, claim 20 is patentable over the combination of Gibson, Sun, admitted prior art, and Hsi, and Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

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Claims 21, 33, 34, and 36 were rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of Sun or admitted prior art and further in view of U.S. Pat. No. 6,262,542 (Kim). Applicants respectfully traverse the rejection.

Kim is directed to an electronic ballast system, and Kim fails to suggest or mention methods for operating detectors or UV lamps used to produce ions for measurement. Accordingly, the arguments provided above also apply to the combination of Gibson, Sun, admitted prior art, and Kim and show that the combination fails to teach or suggest "(c) changing the drive power to a new level in response to a trigger event that indicates that intensity of the output of the lamp may have changed; (d) generating the measurement signal from a current of ions produced by exposing sample gas to the output from the lamp operated at the new level; and (e) determining a concentration of the ionizable gases using the measurement signal," as recited in claim 13. Accordingly, claims 21, 33, 34, and 36, which depend from claim 13, are patentable over the combination of Gibson, Sun, admitted prior art, and Kim, and Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claim 35 was rejected under 35 U.S.C. § 103(a) as unpatentable over Gibson in view of Sun or admitted prior art and Kim and further in view of U.S. Pat. No. 5,528,288 (Sandor). Applicants respectfully traverse the rejection.

Sandor is directed to an illumination control system for a film scanner, and Sandor fails to suggest or mention methods for operating detectors or UV lamps used to produce ions for measurement. Accordingly, the arguments provided above also apply to the combination of Gibson, Sun, admitted prior art, Kim, and Sandor and show that the combination fails to teach or suggest a process as recited in claim 13. Accordingly, claim 35, which depends from claim 13, is patentable over the combination of Gibson, Sun, admitted prior art, Kim, and Sandor, and Applicants request reconsideration and withdrawal of this rejection under 35 U.S.C. § 103.

Claims 24-26 were objected to as dependent upon a rejected claim but were indicated as allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 24 is amended to independent form including the original limitations of claims 13, 22, and 23. Claims 25 and 26 depend from claim 24 and no longer

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depend from a rejected claim. In view of the above amendments, Applicants request reconsideration and withdrawal of the objection to claims 24-26.

In summary, claims 13-36 were pending in the application. This response amends claims 13, 15, 22, 24, 28, 31, and 32. For the above reasons, Applicants respectfully request allowance of the application including claims 13-36.

Please contact the undersigned attorney at (408) 927-6700 if there are any questions concerning the application or this document.

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Respectfully submitted,

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